Miguel A Alonso

List of Publications by Year
in descending order

186	3,140	186265	182427
papers	citations	28 h-index	51 g-index

190	190	190	1673
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Full PoincarÃ© beams. Optics Express, 2010, 18, 10777.	3.4	383
2	Angular momenta and spin-orbit interaction of nonparaxial light in free space. Physical Review A, 2010, 82, .	2.5	232
3	Spin-to-orbital angular momentum conversion in focusing, scattering, and imaging systems. Optics Express, 2011, 19, 26132.	3.4	210
4	Wigner functions in optics: describing beams as ray bundles and pulses as particle ensembles. Advances in Optics and Photonics, 2011, 3, 272.	25.5	128
5	Longitudinal iso-phase condition and needle pulses. Optics Express, 2016, 24, 28669.	3.4	86
6	Transverse spinning of unpolarized light. Nature Photonics, 2021, 15, 156-161.	31.4	82
7	Geometric phases in 2D and 3D polarized fields: geometrical, dynamical, and topological aspects. Reports on Progress in Physics, 2019, 82, 122401.	20.1	74
8	Shaping caustics into propagation-invariant light. Nature Communications, 2020, 11, 3597.	12.8	62
9	What is the maximum differential group delay achievable by a space-time wave packet in free space?. Optics Express, 2019, 27, 12443.	3.4	61
10	Quantum and classical opticsâ€“emerging links. Physica Scripta, 2016, 91, 063003.	2.5	57
11	Ray-optical PoincarÃ© sphere for structured Gaussian beams. Optica, 2017, 4, 476.	9.3	55
12	Two methods for modeling the propagation of the coherence and polarization properties of nonparaxial fields. Optics Communications, 2010, 283, 4457-4466.	2.1	53
13	Imaging the polarization of a light field. Optics Express, 2013, 21, 4106.	3.4	53
14	Spherical fields as nonparaxial accelerating waves. Optics Letters, 2012, 37, 5175.	3.3	50
15	Three-dimensional accelerating electromagnetic waves. Optics Express, 2013, 21, 13917.	3.4	49
16	Birefringent Fourier filtering for single molecule coordinate and height super-resolution imaging with dithering and orientation. Nature Communications, 2020, 11, 5307.	12.8	49
17	Highly focused spirally polarized beams. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2005, 22, 1420.	1.5	43
18	Airy beams: a geometric optics perspective. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2010, 27, 2574.	1.5	42

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19	Full PoincarÃ© beams II: partial polarization. Optics Express, 2012, 20, 9357.	3.4	40
20	Swings and roundabouts: optical PoincarÃ© spheres for polarization and Gaussian beams. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20150441.	3.4	39
21	Classical entanglement underpins the invariant propagation of spaceâ€“time wave packets. Optics Letters, 2019, 44, 2645.	3.3	38
22	Single-shot polarimetry imaging of multicore fiber. Optics Letters, 2016, 41, 2105.	3.3	37
23	Wigner functions for nonparaxial, arbitrarily polarized electromagnetic wave fields in free space. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2004, 21, 2233.	1.5	36
24	Radiometry and wide-angle wave fields III: partial coherence. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2001, 18, 2502.	1.5	34
25	Closed form formula for Mie scattering of nonparaxial analogues of Gaussian beams. Optics Express, 2008, 16, 5926.	3.4	34
26	Shearing interferometry via geometric phase. Optica, 2019, 6, 396.	9.3	33
27	Measurement of spatial coherence through diffraction from a transparent mask with a phase discontinuity. Optics Letters, 2012, 37, 2724.	3.3	29
28	Radiometry and wide-angle wave fields I Coherent fields in two dimensions. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2001, 18, 902.	1.5	28
29	Using shadows to measure spatial coherence. Optics Letters, 2014, 39, 4927.	3.3	28
30	Measures of spread for periodic distributions and the associated uncertainty relations. American Journal of Physics, 2001, 69, 340-347.	0.7	27
31	Using rays better I Theory for smoothly varying media. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2001, 18, 1132.	1.5	27
32	Propagation of the electric correlation matrix and the van Cittertâ€“Zernike theorem for random electromagnetic fields. Journal of Modern Optics, 2006, 53, 969-978.	1.3	27
33	Experimental demonstration of superresolution of partially coherent light sources using parity sorting. Optics Express, 2021, 29, 22034.	3.4	27
34	Measuring Geometric Phase without Interferometry. Physical Review Letters, 2018, 120, 233602.	7.8	26
35	Can a Dove prism change the past of a single photon?. Quantum Studies: Mathematics and Foundations, 2015, 2, 255-261.	0.9	25
36	Radiometry and wide-angle wave fields II Coherent fields in three dimensions. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2001, 18, 910.	1.5	24

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37	Uncertainty products for nonparaxial wave fields. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2000, 17, 2391.	1.5	23
38	Using rays better II Ray families to match prescribed wave fields. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2001, 18, 1146.	1.5	23
39	Closed-form bases for the description of monochromatic, strongly focused, electromagnetic fields. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2009, 26, 2211.	1.5	22
40	Transverse shifts and time delays of spatiotemporal vortex pulses reflected and refracted at a planar interface. Nanophotonics, 2022, 11, 737-744.	6.0	22
41	Entanglement polygon inequality in qubit systems. New Journal of Physics, 2018, 20, 063012.	2.9	21
42	Generalized Gaussian beams in terms of Jones vectors. Journal of Optics (United Kingdom), 2019, 21, 084001.	2.2	21
43	Gaussian mode families from systems of rays. JPhys Photonics, 2019, 1, 025003.	4.6	21
44	Bases for the description of monochromatic, strongly focused, scalar fields. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2009, 26, 1754.	1.5	20
45	Simultaneous Measurement of Multiple Parameters of a Subwavelength Structure Based on the Weak Value Formalism. Physical Review Letters, 2019, 122, 123603.	7.8	19
46	Modal Majorana Sphere and Hidden Symmetries of Structured-Gaussian Beams. Physical Review Letters, 2020, 125, 123903.	7.8	19
47	Using rays better III Error estimates and illustrative applications in smooth media. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2001, 18, 1357.	1.5	17
48	The effect of orbital angular momentum and helicity in the uncertainty-type relations between focal spot size and angular spread. Journal of Optics (United Kingdom), 2011, 13, 064016.	2.2	17
49	Uncertainty relations and minimum uncertainty states for the discrete Fourier transform and the Fourier series. Journal of Physics A, 2003, 36, 7027-7047.	1.6	15
50	The cross-spectral density matrix of a planar, electromagnetic stochastic source as a correlation matrix. Optics Communications, 2008, 281, 2393-2396.	2.1	15
51	Paraxial and nonparaxial polynomial beams and the analytic approach to propagation. Optics Letters, 2011, 36, 4452.	3.3	15
52	Understanding the effects of groove structures on the MTF. Optics Express, 2017, 25, 18827.	3.4	15
53	Center-of-mass interpretation for bipartite purity analysis of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>N</mml:mi></mml:math>-party entanglement. Physical Review A, 2016, 94, .	2.5	14
54	Nonparaxial fields with maximum joint spatial-directional localization I Scalar case. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2006, 23, 691.	1.5	13

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55	New basis for rotationally symmetric nonparaxial fields in terms of spherical waves with complex foci. Optics Express, 2006, 14, 6894.	3.4	13
56	Strehl ratio as the Fourier transform of a probability density of error differences. Optics Letters, 2016, 41, 3735.	3.3	13
57	PoincarÃ© sphere representation for spatially varying birefringence. Optics Letters, 2018, 43, 379.	3.3	13
58	New approach to semiclassical analysis in mechanics. Journal of Mathematical Physics, 1999, 40, 1699-1718.	1.1	12
59	Consistent analogs of the Fourier uncertainty relation. American Journal of Physics, 2001, 69, 1091-1095.	0.7	12
60	Coherence vortices in Mie scattered nonparaxial partially coherent beams. Optics Express, 2012, 20, 2858.	3.4	12
61	Orthonormal basis for nonparaxial focused fields in two dimensions, and its application to modeling scattering and optical manipulation of objects. American Journal of Physics, 2012, 80, 82-93.	0.7	12
62	Optimal birefringence distributions for imaging polarimetry. Optics Express, 2019, 27, 36799.	3.4	12
63	Measurement of Helmholtz wave fields. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2000, 17, 1256.	1.5	11
64	Phase-space approach to lensless measurements of optical field correlations. Optics Express, 2016, 24, 16099.	3.4	11
65	Asymptotic estimation of the optical wave propagator I Derivation of a new method. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1998, 15, 1329.	1.5	10
66	Diffraction of paraxial partially coherent fields by planar obstacles in the Wigner representation. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2009, 26, 1588.	1.5	10
67	Ray transfer matrix for a spiral phase plate. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2013, 30, 2526.	1.5	10
68	Polarization singularities and MÃ¶bius strips in sound and water-surface waves. Physics of Fluids, 2021, 33, .	4.0	10
69	Phase-space distributions for high-frequency fields. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2000, 17, 2288.	1.5	9
70	Generation of nonparaxial accelerating fields through mirrors II: Three dimensions. Optics Express, 2014, 22, 14738.	3.4	9
71	Generation of nonparaxial accelerating fields through mirrors I: Two dimensions. Optics Express, 2014, 22, 7124.	3.4	9
72	Birefringent masks that are optimal for generating bottle fields. Optics Express, 2017, 25, 9318.	3.4	9

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73	Validity of the perturbation model for the propagation of MSF structure in 2D. Optics Express, 2019, 27, 3390.	3.4	9
74	Beyond the Fresnel approximation for focused waves. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1999, 16, 1958.	1.5	8
75	Complete far-field asymptotic series for free fields. Optics Letters, 2006, 31, 3028.	3.3	8
76	Nonparaxial fields with maximum joint spatial-directional localization II Vectorial case. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2006, 23, 701.	1.5	8
77	Ray-based propagation of the cross-spectral density. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2008, 25, 1395.	1.5	8
78	Focused beam scatterometry for deep subwavelength metrology. , 2014, , .		8
79	Lorenz-Mie scattering of focused light via complex focus fields: An analytic treatment. Physical Review A, 2018, 97, .	2.5	8
80	Measuring vector field correlations using diffraction. Optics Express, 2018, 26, 8301.	3.4	8
81	Predictive models for the Strehl ratio of diamond-machined optics. Applied Optics, 2019, 58, 3272.	1.8	8
82	Effects on the OTF of MSF structures with random variations. Optics Express, 2019, 27, 34665.	3.4	8
83	Platonic Gaussian beams: wave and ray treatment. Optics Letters, 2020, 45, 6759.	3.3	8
84	Polynomials of Gaussians and vortex-Gaussian beams as complete, transversely confined bases. Optics Letters, 2017, 42, 2205.	3.3	8
85	Generalization of Hamiltonâ€™s formalism for geometrical optics. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1995, 12, 2744.	1.5	7
86	Semigeometrical estimation of Green's functions and wave propagators in optics. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1997, 14, 1076.	1.5	7
87	Uniform asymptotic expansions for wave propagators via fractional transformations. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1997, 14, 1279.	1.5	7
88	Asymptotic estimation of the optical wave propagator II Relative validity. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1998, 15, 1341.	1.5	7
89	Joint spatial-directional localization features of wave fields focused at a complex point. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2006, 23, 933.	1.5	7
90	Propagation of partially coherent fields through planar dielectric boundaries using angle-impact Wigner functions I. Two dimensions. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2007, 24, 2590.	1.5	7

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91	Localization measures for high-aperture wavefields based on pupil moments. Journal of Optics, 2008, 10, 033001.	1.5	7
92	Ambiguity function and phase-space tomography for nonparaxial fields. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2011, 28, 897.	1.5	7
93	Mie scattering of highly focused, scalar fields: an analytic approach. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2016, 33, 1236.	1.5	7
94	Scalar and electromagnetic nonparaxial bases composed as superpositions of simple vortex fields with complex foci. Optics Express, 2017, 25, 14856.	3.4	7
95	Single-shot noninterferometric measurement of the phase transmission matrix in multicore fibers. Optics Letters, 2018, 43, 4493.	3.3	7
96	Calibration of a reversed-wavefront interferometer for polarization coherence metrology. , 2007, , .		6
97	Spin-orbit interactions of light in isotropic media. , 0, , 174-245.		6
98	Imaging with complex ray-optical refractive-index interfaces between complex object and image distances. Optics Letters, 2012, 37, 701.	3.3	6
99	Effects of defocus and other quadratic errors on OTF. Optics Letters, 2017, 42, 5254.	3.3	6
100	Fractional Legendre transformation. Journal of Physics A, 1995, 28, 5509-5527.	1.6	5
101	What on earth is a ray and how can we use them best?. , 1998, 3482, 22.		5
102	Ray-based diffraction calculations using stable aggregates of flexible elements. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2013, 30, 1223.	1.5	5
103	Is the Maxwellâ€“Shafer fish eye lens able to form super-resolved images?. New Journal of Physics, 2015, 17, 073013.	2.9	5
104	Validity of the perturbation model for the propagation of MSF structures in 3D. Optics Express, 2020, 28, 20277.	3.4	5
105	Propagation of nonparaxial partially coherent fields across interfaces using generalized radiometry. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2009, 26, 2012.	1.5	4
106	Phase space distributions tailored for dispersive media. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2010, 27, 1194.	1.5	4
107	The Ultrasound Needle Pulse. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2017, 64, 1045-1049.	3.0	4
108	Complete confined bases for beam propagation in Cartesian coordinates. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2017, 34, 1697.	1.5	4

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109	Radiometry and Wide-Angle Wave Fields. Optics and Photonics News, 2001, 12, 52.	0.5	3
110	Comment on â€œDo evanescent waves really exist in free space?â€• Optics Communications, 2006, 266, 448-449.	2.1	3
111	Monochromatic scalar fields with maximum focal irradiance. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2007, 24, 2057.	1.5	3
112	Free-space asymptotic far-field series. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2009, 26, 2410.	1.5	3
113	Maximum likelihood estimation in the context of an optical measurement. Progress in Optics, 2020, 65, 231-311.	0.6	3
114	Using Rays Better. Optics and Photonics News, 2001, 12, 54.	0.5	2
115	Monochromatic electromagnetic fields with maximum focal energy density. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2007, 24, 3115.	1.5	2
116	Generalized radiometry model for the propagation of light within anisotropic and chiral media. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2011, 28, 791.	1.5	2
117	Optimal pulses for arbitrary dispersive media. Journal of the European Optical Society-Rapid Publications, 0, 6, .	1.9	2
118	Mie scattering of high numerical aperture fields. , 2011, , .		2
119	Diffraction Free Stokes Distributions in a Full PoincarÃ© Beam. , 2010, , .		2
120	Study of reflectors for illumination via conformal maps. Optics Letters, 2019, 44, 3809.	3.3	2
121	Rapidly decaying Fourier-like bases. Optics Express, 2019, 27, 32263.	3.4	2
122	<title>Fractional Legendre transformation and its use in Hamilton's formalism</title>. , 1996, , .		1
123	Stable aggregates of flexible element link rays and waves. , 2004, 5185, 125.		1
124	The Connection between Rays and Waves. , 2014, , 457-464.		1
125	Analytic treatment of nonparaxial full-PoincarÃ© fields: singularity structure and trapping properties. Journal of Optics (United Kingdom), 2021, 23, 024005.	2.2	1
126	A tribute to Marat Soskin. Journal of Optics (United Kingdom), 2021, 23, 050201.	2.2	1

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127	Entanglement Constraints in Multi-Qubit Systems. , 2015, , .		1
128	Nonparaxial Fields with Maximum Joint Spatial-Directional Localization. , 2005, , .		1
129	Simultaneous Determination of 3D Orientation and 3D Localization in Single Emitter Microscopy Imaging. , 2016, , .		1
130	Measuring Geometric Phase Without Interferometry. , 2018, , .		1
131	Abstract spaces, mappings and geometry in the study of optical systems. , 2021, , .		1
132	Angle-impact representations for wave fields in convex cavities. Optics Communications, 2003, 224, 159-173.	2.1	0
133	A ray-based framework for propagating partially coherent field information through optical systems. , 2007, , .		0
134	Methods for modeling nonparaxial fields. , 2010, , .		0
135	Generalized phase space representations in classical optics. Proceedings of SPIE, 2011, , .	0.8	0
136	Full PoincarÃ© beams. , 2011, , .		0
137	Angular momenta and spin-orbit interaction for nonparaxial beams. Proceedings of SPIE, 2011, , .	0.8	0
138	Angular momentum of light revisited: spin-orbit interactions in free space. , 2011, , .		0
139	Simple methods for measuring spatial coherence and their relation to the Wigner function. , 2012, , .		0
140	Analytical techniques for the study of focused beams. Proceedings of SPIE, 2013, , .	0.8	0
141	3D Accelerating Electromagnetic Waves. , 2013, , .		0
142	Measuring spatial coherence through the shadow of small obstacles. , 2014, , .		0
143	Weak measurements applied to process monitoring using focused beam scatterometry. , 2014, , .		0
144	Measurement of spatial coherence through the shadow of small obscurations. Proceedings of SPIE, 2014, , .	0.8	0

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145	Is the Maxwell-Shafer fish eye lens able to form super-resolved images?. , 2016, , .		0
146	Optimization of a Birefringent Mask for Generating Optical Bottle Fields. , 2017, , .		0
147	Birefringent distributions tailored for imaging and other applications. , 2018, , .		0
148	Experimental demonstration of superresolution of partially coherent light sources using parity sorting: erratum. Optics Express, 2021, 29, 35579.	3.4	0
149	New wave-based radiance analogs and their applications. , 2003, , .		0
150	Ray-based diffraction calculations using SAFE. , 2004, , .		0
151	Exact Ray-Based Representation of the Polarization of Nonparaxial Electromagnetic Fields. , 2005, , .		0
152	Wigner functions for non-paraxial fields: Interfaces. , 2006, , .		0
153	Efficient Computation of Rotationally-Symmetric Nonparaxial Fields in Terms of Spherical Waves with Complex Foci. , 2006, , .		0
154	Propagation of Partially Coherent, Partially Polarized Fields via a Wigner Representation in Direction and Angular Momentum. , 2007, , .		0
155	Fields with Maximum Focal Irradiance. , 2007, , .		0
156	Series of corrections to far-field estimates. , 2007, , .		0
157	Diffraction effects in Wigner functions for paraxial and nonparaxial fields. , 2008, , .		0
158	Exact ray-based nonparaxial propagation of coherence and polarization through anisotropic media. , 2008, , .		0
159	The Connection Between Rays and Waves. , 2009, , .		0
160	Mie Scattering of Arbitrary Focused Fields. , 2010, , .		0
161	Full PoincarÃ© beams. , 2010, , .		0
162	Bases for focused waves in two dimensions. , 2010, , .		0

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163	Simple models for focused fields. , 2011, , .		0
164	Coherence retrieval by measuring the diffracted field from a binary planar phase mask. , 2011, , .		0
165	Changes in the degree of polarization through a paraxial focus. , 2012, , .		0
166	Generalized Wigner functions in Classical Optics. , 2012, , .		0
167	Measurement of spatial coherence through diffraction from a transparent mask with a phase discontinuity: experimental results. , 2012, , .		0
168	Measuring Spatial Coherence Without Lenses: A Phase-Space Approach. , 2015, , .		0
169	Lensless Measurements of Optical Field Correlations. , 2016, , .		0
170	Single-Shot Polarimetry Imaging of Multicore Fibers. , 2016, , .		0
171	MTF as the Fourier Transform of a Pupil-Difference Probability Density. , 2017, , .		0
172	MTF as the Fourier Transform of a Pupil-Difference Probability Density. , 2017, , .		0
173	Confined bases: from paraxial to electromagnetic. , 2017, , .		0
174	Lorenz-Mie Scattering in Terms of Complex Focus Fields. , 2018, , .		0
175	Geometric Phases in Optics. , 2018, , .		0
176	Using the pupil difference probability density to understand OTF. , 2018, , .		0
177	The polarization of nonparaxial fields: description and applications. , 2019, , .		0
178	Maximum Differential Group Delay Achievable by a Space-TimeWave-Packet in Free Space. , 2019, , .		0
179	Tailored Shearing Interferometry Using Geometric Phase.. , 2019, , .		0
180	The Validity of the Perturbation Model for the Propagation of MSF Structures. , 2019, , .		0

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181	Telescope windows examined by Wigner function. , 2019, , .		0
182	Customizing Caustics. Optics and Photonics News, 2020, 31, 48.	0.5	0
183	Single molecule Coordinate and Height super-resolution Imaging with Dithering and Orientation (CHIDO). , 2020, , .		0
184	Ince-Gauss Modes of Aberrated Cavities as Emulators of Many-Body Topological Transitions. , 2020, , .		0
185	Limit on Differential Group Delay Achievable by Space-Time Wave Packets. , 2020, , .		0
186	Majorana Representation and Hidden Symmetries of Structured-Gaussian Beams. , 2020, , .		0